NUTRITION IN TRIATHLON

MoN SPORTS

NUTRITIONAL BASICS

A special sport also requires a special diet. The training volume increases due to the combination of three disciplines, and the duration of the units is also longer. This results in an extremely high energy requirement.

By providing the **right nutrition during training** and **optimal regeneration** afterwards, you can give your body the support it needs. This not only leads to **better training performance**, but also to a **reduction in the risk of injury and an increase in motivation**.

Therefore, **make sure you have a sufficient supply of carbohydrates**, otherwise you will lack the so important energy!

The fueling in the sub-disciplines should be done in different ways.

Swimming:
If the training volume is not excessive, well-filled glycogen stores are sufficient for swimming. The energy consumption should be well compensated immediately after the swim – ideally by a combination of carbohydrates and proteins, precisely 0.8g carbohydrates/kg body weight & 0.2-0.4g proteins/kg body weight.

Cycling:
This discipline offers the best opportunity to consume carbohydrates. You should definitely take advantage of this. During the competition the carbohydrate intake should be as high as possible: about 80-100g of carbohydrates per hour. During training, the carbohydrate intake is optimally adapted to the training goal.

Running:
The constant impact load makes energy intake during running a bit more difficult. Nevertheless, an intake of about 60-70g carbohydrates/hour is possible. As with cycling, the same basic rule applies to running: Slow energy for slow runs (SLOW CARB) – fast carbohydrates for intensive units and competitions (FAST CARB/ POWER CARB)!

Training and competition nutrition: If you supply energy every 20-30 minutes, you are on the right track.
Of course, the fueling must be adapted to the discipline.

NUTRITION ENDURANCE UNIT

General Info	Before Training	During Training	After Training
Training goals: Improvement of fat metabolism/ decrease VLamax **Training method:** Continuous, alternating method **Intensity:** Low **Duration:** Medium – long **Example units:** • Low-intensity session: E.g. light swim session with focus on technique, low-intensity bike ride, base run • „Train Low“: E.g. fasting training in the morning or depleted glycogen stores due to pre-load of a previous training session	**Basic consideration:** Requirement for effective training of fat metabolism is intensity control **Nutrition:** Carbohydrate-moderate food 2-3h before the workout, possibly increased protein content **Example:** • E.g. muesli with yogurt/quark, salmon with baked vegetables and 1 sweet potato	**Basic consideration:** Due to the lower intensity (up to FatMax range), primarily free fatty acids are used as energy source, yet carbohydrates are also burned at the same time **Fueling:** Supplying slow carbohydrates during the exercise avoids a too high energy deficit. Encourage positive effects of an optimally trained fat metabolism. Later (insulin effects are not taken into account) concentrated, faster carbohydrates are recommended **Example** • 30-35g/h SLOW CARB Note: At load times over 2h the carbohydrate demand is higher, therefore: • Use POWER CARB after 1/3 to 1/2 of the total load time, as higher dosage is possible here (60-80g/h) or 1-2 GEL 40 (depending on what you also take in in terms of carbs via drinks) • Additional energy demand can be covered by PORRIDGE BARS, for very long sessions additionally PROTEIN BARS	**Basic Consideration:** REFUEL (carbohydrate uptake) = Replenishment of depleted glycogen stores REBUILD (protein intake) = support of the regeneration of the stressed muscles REHYDRATE (fluid intake) = compensation of water and electrolyte losses through sweating **Nutrition:** Combination of high value carbohydrates and proteins **Example:** Within 30min after end of exertion: • 30-40g RECOVERY SHAKE + 5 apricots or dates **Follow-up:** • Carbohydrate-rich food within 2h after exercising + protective substances through fruits & vegetables, some protein • E.g. couscous salad, pasta, chickpeas or feta cheese

NUTRITION INTENSE UNIT

General Info	Before Training	During Training	After Training
Training goals Improvement of carbohydrate metabolism/increase VO2max **Training method:** Interval, competition method **Intensity:** Medium – intense **Duration:** Medium **Example units:** • Intensive unit, e.g. run: 8x200m, bike: 3x (6min high load/3min normal load), swim: 8x25m sprint + technique • Competition specific unit: pace, around/above anaerobic threshold	**Basic consideration:** A requirement for an intense training session is filled glycogen stores *Note:* *Replenishing carbohydrate stores takes time. If an intensive session is scheduled for the next day, it is advisable to eat a carbohydrate-rich meal the evening before* **Nutrition:** • Carbohydrate-rich meal 3h before exercise Example: • Overnight Oats, Quinoa- bowl	**Basic Consideration:** Exponential carbohydrate consumption when training around or above threshold range **Fueling:** Supply of rapidly available carbohydrates to avoid the body having to rely on the third source of energy, proteins **Example:** • 40g/h FAST CARB or for higher/ longer exertion 60-80g/h POWER CARB or RACE CARB X (up to 120ml/h) or 1-2 GEL 40 (depending on the amount of carbs you also take in through drinks) • During „train-the-gut" sessions carbohydrate intakes of up to 120g/h are possible (the digestive tract has to be trained to cope with higher carbohydrate intakes in competition; for example 1x per week a carbohydrate intake during training of up to 120g/h can be „trained") **Example unit 2h bike with 3x6min Z4 intervals:** • 2x40g FAST CARB	**Basic consideration:** REBUILD - REFUEL - REHYDRATE *OPEN WINDOWS EFFECT:* *Increased susceptibility to infections after intensive exercise + improved absorption of nutrients* = **immediate supply of proteins and carbohydrates after end of exertion** **Nutrition:** Combination of high-quality carbohydrates and proteins **Example:** Within 30min after end of exertion: • 30-40g RECOVERY SHAKE + 5 apricots or dates • Additionally after particularly intensive training: 40-50g RECOVERY 8 **Follow-up:** • Carbohydrate-rich food within 2h after exercising + protective substances through fruit & vegetables, some protein. • E.g. vegetable curry with rice + chicken meat or natural yogurt

NUTRITION SHORT DISTANCES

Before Competition	During Competition	After Competition
Basic consideration: Requirements for optimal performance in competition are filled glycogen stores **Nutrition:** 2-3h before the start, last meal: carbohydrate-rich, low in fiber and fat **Example breakfast:** • Roll with honey During the run-in: half bottle (250ml) FAST CARB (20g)	**Basic consideration:** For short training load durations of up to 1h, the body does not need any supply during the load, but a mouth rinse with carbs has a performance-enhancing effect **Good preparation and follow-up of the intensive load are particularly important here!** **Fueling:** • From 1h on generally: 60-80g/h POWER CARB or 1-2 GEL 40 (depending on what you also take in with drinks) **Example** • On 20km bike course during sprint distance: 30-40g POWER CARB in a 250ml bottle	**Basic consideration:** After the competition, it is important to supply the body with high-quality energy sources and thus actively promote the regeneration processes **Nutrition:** Post-load supply of high value & complex protein source + carbohydrates **Example:** Within 30min: • 40-50g RECOVERY 8 Within 60-90min: • 30-40g RECOVERY SHAKE + 5 dates **Follow-up:** • High carbohydrate food + some protein • E.g. rice or pasta pan with vegetables and some parmesan cheese

NUTRITION LONG DISTANCES

Before Competition	During Competition	After Competition
Basic consideration: Requirements for optimal performance in competitions are filled glycogen stores **Nutrition:** CARBOLOADING • 2-3h before the start last meal: high carbohydrate, low fiber and low fat **Example:** • Breakfast: e.g. bread roll with honey, oat flakes fine with raisins, almond milk and banana	**Basic Consideration:** For long duration of competition, the body needs a constant & well tolerated source of energy **Fueling:** Supply of rapidly available carbohydrates, high dosage in competition **Example:** • 80-100g/h POWER CARB or up to 150g RACE CARB X (=120g carbs corresponds to approx. 120ml of the drink) for long distance or 1-3 GEL 40 (depending on what you also take in in terms of carbs via drinks) **Individual disciplines:** Swim: no food necessary/possible Bike: 80-100g/h POWER CARB in 750ml water or 90-120ml RACE CARB X/h + water or 2 GEL 40; for long distance supplement with 1 to 2 PORRIDGE BARS Run: 60-80g/h POWER CARB in 500ml water or 80-100ml RACE CARB X/h or 1-2 GEL 40 (depending on what you also consume in carbs through drinks). *TRAIN THE GUT:* *Carbohydrate tolerance can be trained, so: test dosage during training and increase slowly!*	**Basic consideration:** After the competition, it is important to supply the body with high-quality energy sources and thus actively promote the regeneration processes **Nutrition:** Post-exercise supply of high value carbohydrates & complex protein source **Example:** Within 30min after end: • 40-50g RECOVERY 8 Within 60-90min after end: • 30-40g RECOVERY SHAKE + 5 dates **Follow-up** • High carbohydrate food • E.g. potatoes with vegetables + egg or kefir

FINAL TIPS

Top tips from professional triathlete Laura Philipp

- Start 2-3 days ahead of the competition to adapt the diet to the upcoming load. This time should be used to fill the carbohydrate stores (see also Carboloading)
- Test your last meal before the competition already during training
- Also make sure that the fiber and protein content is not too high
- Find out your carbohydrate consumption and test it already during training (train the gut)
- After the competition is before the competition: A quick supply of nutrients makes sense – if possible within one hour after exercise. In this time window (open window) the body is particularly receptive to the nutrients supplied and can use them immediately for the regeneration process

Many more free tips & tricks on training & nutrition
wissen.mon-sports.com/en/

Info about MoN Sports & all product info
mon-sports.com/en

Responsible for content according to § 55 Abs. 2 RStV

Ministry of Nutrition GmbH
represented by the managing director Peter Höschl
Beuchaer Straße 4 74392 Freudental, Germany

Contact/feedback: kontakt@ministry-of-nutrition.de